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BE-COMP E-B2

**ASSIGNMENT NO-4**

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**Title** : Write YACC specification to check syntax of if & if ? else statements of C language.

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**YACC File:**

%{

#include<stdio.h>

#include<stdlib.h>

%}

%token num letter LT GT EQ LE GE NE AND OR INC DEC END

%left '+''-'

%left '\*''/'

%right '^'

%right '='

%nonassoc UMINUS

%nonassoc IF

%nonassoc ELSEIF

%nonassoc ELSE

%left GE NE LT GT LE EQ

%left AND OR

%%

S:ST END{printf("\n Accepted\n");exit(0);}

ST:IF'('F')''{'ST'}'%prec IF

|IF'('F')''{'ST'}'ELSE'{'ST'}'

|IF'('F')''{'ST'}'ELSEIF'('F')''{'ST'}'ELSE'{'ST'}'

|IF'('F')'ST

|IF'('F')'ST ELSE ST

|IF'('F')'ST ELSEIF'('F')' ST ELSE ST

|E';'

|E';'ST

F:C LO C

|C

LO:AND

|OR

C:E RELOP E

|E

E:letter '='E

|E'+'E

|E'-'E

|E'\*'E

|E'/'E

|E'^'E

|'('E')'

|'-'E %prec UMINUS

|letter

|num

|letter INC

|letter DEC

RELOP:LT

|GT

|EQ

|LE

|GE

|NE

;

%%

#include"lex.yy.c"

int main()

{

yyparse();

yylex();

return END;

}

yyerror(char \*s)

{

printf("\nError \n");

}

**LEX File :**

%{

#include "y.tab.h"

%}

%%

if return IF;

elseif return ELSEIF;

else return ELSE;

"&&" return AND;

"||" return OR;

"<=" return LE;

">=" return GE;

">" return GT;

"<" return LT;

"!=" return NE;

"++" return INC;

"--" return DEC;

"==" return EQ;

[0-9]+ return num;

[a-zA-Z]+ return letter;

"$" return END;

. return yytext[0];

%%

**Output :**

dell@dell-Inspiron-3542:~$ cd Desktop

dell@dell-Inspiron-3542:~/Desktop$ lex if.l

dell@dell-Inspiron-3542:~/Desktop$ yacc -d if.y

dell@dell-Inspiron-3542:~/Desktop$ cc y.tab.c -ll -ly

dell@dell-Inspiron-3542:~/Desktop$./a.out

if(x>y)

{

z++;

}

elseif(c>d)

{

g++;

}

else

{

d=0;

}

$

Accepted

dell@dell-Inspiron-3542:~/Desktop$ ./a.out

if(s=t)

t=0;

elseif(r==0&&g==0)

b=1;

else

k++;

$

Accepted

dell@dell-Inspiron-3542:~/Desktop$./a.out

if(j<=

d=4;

Error

dell@dell-Inspiron-3542:~/Desktop$./a.out

if(a>=b)

f=0;

$

Accepted

dell@dell-Inspiron-3542:~/Desktop$./a.out

if(l==1||d==0)

{

a=1;

d++;

}

else

{

a==1;

Error